REMARKS

Applicant respectfully requests further examination and reconsideration in view of the comments set forth fully below. Claims 1-12 and 15-17 were pending. Within the Office Action, Claims 1-12 and 15-17 have been rejected. By the above amendments, Claims 2-5, 7-9, 11, 12 and 15-17 have been amended, and the new Claim 18 has been added. Accordingly, Claims 1-12 and 15-18 are now pending.

Rejections Under 35 U.S.C. § 112:

Within the Office Action, Claim 5 has been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. By the above amendment, Claim 5 has been amended to include a server which provides sufficient structural support for the claim. Support for this limitation can be found in the Present Specification at least at page 4, lines 9-12, which states, "[t]he term home location database is intended to provide a generic expression which includes within its scope a home location register and a home subscriber server which are terms more usually used with reference to second and third generation mobile networks." For at least these reasons, this rejection of Claim 5 under 35 U.S.C. § 112 should be withdrawn.

Rejections Under 35 U.S.C. § 103:

Within the Office Action, Claims 1, 2, 6-12 and 15-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2001/0036173 to Shmulevich et al. [hereinafter Shmulevich] in view of GSM 3GPP TS23.040 (V4.8.0, 06-2003) [hereinafter TS23.040] and in further view of U.S. Patent No. 6,801,781 to Provost et al. [hereinafter Provost]. The Applicants respectfully disagree.

Shmulevich teaches a telecommunications system in which signalling data, voice data, packet data etc., is communicated between a number of mobile telecommunications networks via a packet data link provided by an IP network (as opposed to communication of this data via a conventional circuit switched link). However, as is clear from Figures 1-5 of Shmulevich, the IP network connections exist between the various network gateways (GW) of the mobile network and not between the mobile network and the User Equipment (UE). This is illustrated for example in paragraph [0054] cited within the Office Action:

". . .Gateway 74 also serves as a SMS gateway, to carry SMS messages <u>between SMS center 42</u>
<u>and the switches in cellular network</u> 22 via packet-switched network 90." [Shmulevich, ¶ 0054,
emphasis added]

In other words, SMS messages are transmitted within the mobile network via a packet
data connection, but only between switching centres. SMS data is not transmitted to individual
devices (User Equipments) via an IP network.

Shmulevich contains no teaching in which the UE is attached to the IP network (as
required by the independent Claims 1, 6 and 10). Rather, it is the standard mobile network
components (for example the base station controller 112 shown in Figure 5 and the gateways
mentioned above) which are attached to the IP network. Therefore, all that is taught in
Shmulevich is a UE communicating with a mobile network in a conventional manner except for
the fact that the mobile network communicates data between core network components via a
packet switched IP network connection.

The independent claims were previously amended to specify that the UE acts as an IP
client. As will be appreciated, in the context of IP network communication, this necessitates that
the user equipment has its own IP address and is communicating data directly via the IP network.

Furthermore, Shmulevich clearly teaches away from the claimed invention. The object of
Shmulevich is to provide a cheaper means of communication by avoiding the use of Public
Switched Telephone Network (PSTN) by using lower-cost packet network infrastructure.
[Shmulevich, ¶15] To achieve this objective, Shmulevich teaches to replace parts of the PSTN by
an IP network, as is shown in Figure 2, reference item 76 of Shmulevich and described as
"Gateways 74 and 78 communicate with one another via a packet-switched network 76,
preferably an IP network, rather than through the facilities of PSTN 26 as in Fig. 1."
[Shmulevich, ¶49] Additionally, Shmulevich teaches "gateway 74 may be linked to SMS center
42, so that SMS messages between network 22 and 24 are carried over packet switching network
76, rather than through the signaling infrastructure of the cellular networks and of PSTN 26."
[Shmulevich, ¶53] Thus, Shmulevich is clearly focused on using a cheap IP network instead of
an expensive PSTN. And since the section of the network between two cellular networks 22 and
24 belongs to respective cellular operators "Cellco 1" and "Cellco 2," there is no incentive as the
section is already inexpensive by being under the control of operators. [Shmulevich, ¶04] In
contrast to Shmulevich, the presently claimed invention is directed towards delivering an SMS
message to a user equipment, when the user equipment is attached to an IP network. Shmulevich
clearly teaches away from having an IP connection to user equipment. There is no incentive of

modifying Shmulevich as this would require replacing the communication path from the gateways 74 and 78 via the SMS centers 42 and 52 down to the user equipment by an IP connection. There is no advantage of doing this and it will involve complex modifications.

Provost appears to be cited as teaching user equipment acting as an Internet Protocol (IP) client. However, referring to Figure 1 of Provost, clearly shows a mobile station 14 separated from a packet data network 22 by a plurality of base station systems 16, a serving GPRS support node 18, and a gateway GPRS support node 20. Furthermore, there is no indication that the path from the SM-SC or to the SM-SC is an IP path. Additionally, there is no motivation to combine Provost with either Shmulevich or TS23.040. Provost teaches a system for a pre-paid SMS service. An SMS is sent by the system if the user of a mobile station has sufficient funds according to a database included in the system. [Provost, col. 5, lines 37-41] Therefore, one would have no motivation to combine the pre-paid SMS service with the teachings of Shmulevich or TS23.040.

The independent Claim 1 is directed to a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP), *the user equipment acting as an Internet Protocol (IP) client.* The system of Claim 1 comprises a short message service centre (SM-SC), a gateway mobile switching centre (GMSC) of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway for communicating between the SMS network and the IP network and a home location database (HLR/HSS) for maintaining address data identifying a current location of a user equipment, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the

home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message. As described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. For at least these reasons, the independent Claim 1 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Claims 2 and 15 are both dependent upon the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination. Accordingly, Claims 2 and 15 are both also allowable as being dependent upon an allowable base claim.

The independent Claim 6 is directed to a method of communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol (IP) network using an Internet Protocol (IP), *the user equipment acting as an Internet Protocol (IP) client.* The method of Claim 6 comprises maintaining address data identifying a current location of the user equipment in a home location database, receiving the SMS message at a gateway mobile switching centre (GMSC) of an SMS network for communicating the SMS message, providing, to the gateway mobile switching centre, from the home location database an address of an Internet Protocol/SMS gateway for communicating between the SMS network and the IP network, sending the SMS message to the IP/SMS gateway, retrieving the IP address corresponding to the subscriber identity number from an IP/SMS database associated with the IP/SMS gateway, and communicating the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the maintaining the address data comprises determining the IP/SMS gateway address from the IP network via which the user equipment is communicating using an authentication server connected to the IP network, communicating the IP/SMS gateway address from the authentication server to the home location database, and storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message. As described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. For at least these reasons, the independent Claim 6 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Claims 7-9 and 16 are all dependent upon the independent Claim 6. As discussed above, the independent Claim 6 is allowable over the teachings of Shmulevich, TS23.040, Provost and

their combination. Accordingly, Claims 7-9 and 16 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 10 is directed to a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol (IP) network using an Internet Protocol (IP), *the user equipment acting as an Internet Protocol (IP) client.* The system of Claim 10 comprises means for maintaining address data identifying a current location of the user equipment in a home location database, means for receiving the SMS message at a gateway mobile switching centre (GMSC) of an SMS network for communicating the SMS message, means for providing, to the gateway mobile switching centre, from the home location database an address of an Internet Protocol/SMS gateway for communicating between the SMS network and the IP network, means for sending the SMS message to the IP/SMS gateway, means for retrieving the IP address corresponding to the subscriber identity number from an IP/SMS database associated with the IP/SMS gateway, and means for communicating the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the means for maintaining the address data comprises means for determining from an authentication server forming part of the IP network the IP/SMS gateway address via which the user equipment is communicating, means for communicating the IP/SMS gateway address from the authentication server to the home location database, and means for storing the IP/SMS gateway address in the home location database in association with the subscriber identity number for retrieval in response to the received SMS message. As described above, neither Shmulevich, TS23.040, Provost nor their combination teach user equipment acting as an Internet Protocol (IP) client. For at least these reasons, the independent Claim 10 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination.

Claims 11, 12 and 17 are all dependent upon the independent Claim 10. As discussed above, the independent Claim 10 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination. Accordingly, Claims 11, 12 and 17 are all also allowable as being dependent upon an allowable base claim.

Within the Office Action, Claims 3-5 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Shmulevich in view of TS23.040, Provost and further in view of Uyless Black (Mobile & Wireless Networks published in 1999) [hereinafter Uyless]. The Applicants respectfully disagree.

It is stated within the Office Action that Uyless teaches that GPRS class A and B (stations) monitors (sic) packet switched system which refers to having indicator or flag to monitor. It appears therefore that it is considered within the Office Action that this teaches the monitoring and setting of a flag in dependence on whether a GPRS UE is communicating via an IP network. The Applicants respectfully disagree with this conclusion. In Uyless, what the citation is actually explaining are the capabilities of different classes of GPRS user equipment. Class A stations (i.e. UEs) can support both circuit switched and packet switched data traffic simultaneously (for example engaging in a circuit switched voice call and a packet switch data call at the same time), as opposed to class B stations which can attach to both circuit switched systems and packet switch systems whilst *monitoring* both systems, but can only support traffic for either circuit switch or packet switched traffic at any one time. The fact that a class B station is capable of "monitoring" both circuit switched and packet switched networks does not imply that a flag is set when the UE is attached to an IP network, it simply means that the UE monitors the air interface for activity on the packet switched connection. Furthermore, the independent Claim 5 has been amended by the previous amendments to specify that the flag indicates if the user equipment is acting as an IP client. This is clearly not taught in Uyless, as a GPRS packet switched connection does not make the UE an IP client (i.e. connected to an IP network with an IP address). Accordingly, neither Shmulevich, TS23.040, Provost, Uyless nor their combination teach a flag indicating if the user equipment is acting as an IP client.

Within the Office Action, in the Response to Arguments section, it is stated that "whenever there is monitoring functionality [is] performed there has to be a mechanism that will allow the class B station to differentiate between two switching mechanism or some kind of indication that tells the system on which system UE is attached to." [Office Action, page 23] Applicants respectfully disagree. More is being read into Uyless than is actually taught. This is evidenced by the vagueness of the Response to Arguments which states in very general terms "a mechanism...or some kind of indication." [Office Action, page 23] Uyless simply does not teach setting a flag. More specifically, Uyless does not teach setting a flag indicating UE is attached to an IP network as claimed in the claimed invention.

Claims 3 and 4 are both dependent upon the independent Claim 1. As discussed above, the independent Claim 1 is allowable over the teachings of Shmulevich, TS23.040, Provost and their combination. Accordingly, Claims 3 and 4 are both also allowable as being dependent upon an allowable base claim.

The independent Claim 5 is directed to a home location database stored on a server, the home location database for maintaining address data identifying a current location of a user equipment, the address data providing an address to which an SMS message addressed to the user equipment at a subscriber identity number should be sent. The home location database of Claim 5 is arranged to provide a gateway mobile switching centre with an address of an IP/SMS gateway for communicating the SMS message to the user equipment at the subscriber identity number, when the user equipment is communicating via an Internet Protocol (IP) network using an Internet Protocol, communication being terminated on the IP network and *the user equipment acting as an Internet Protocol (IP) client,* the address of the IP/SMS gateway being provided by an authentication server, which determines the IP/SMS gateway from the IP network via which the user equipment is communicating the home location database being arranged to store for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is currently communicating via the IP network *and acting as an Internet Protocol (IP) client,* and if the flag is set to indicate that the user equipment is currently communicating via the IP network, an address of the IP/SMS gateway to which SMS messages should be sent. As described above, neither Shmulevich, TS23.040, Uyless, Provost nor their combination teach a flag indicating if the user equipment is acting as an Internet Protocol (IP) client. For at least these reasons, the independent Claim 5 is allowable over the teachings of Shmulevich, TS23.040, Provost, Uyless and their combination.

New Claim

The independent Claim 18 is directed to a network of devices for communicating a Short Message Service (SMS) message to a mobile device using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP), the mobile device acting as an Internet Protocol (IP) client, the network of devices comprising a short message service centre (SM-SC), a gateway mobile switching centre (GMSC) of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway for communicating between the SMS network, the mobile device and the IP network and a home location database (HLR/HSS) for maintaining address data identifying a current location of the mobile device, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association

with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS database associated with the IP/SMS gateway, and to communicate the SMS message to the mobile device at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the mobile device is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message, wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. As described above, the prior art does not teach a network of devices wherein the home location database sets for at least the subscriber identity number of the mobile device, a flag indicative of whether the mobile device is currently communicating via the IP network, the address of the IP/SMS gateway to which SMS messages should be sent being stored in association with the flag. For at least these reasons, the independent Claim 18 is allowable over the teachings of the prior art.

Applicants respectfully submit that the claims are in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,

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